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EXAMINER

RABAGO, ROBERTO

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,051

Applicant(s)

BELL ET AL.

Examiner

Rob Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-77 is/are pending in the application.
- 4a) Of the above claim(s) 60-77 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 32-52 and 55-59 is/are rejected.
- 7) ☒ Claim(s) 53 and 54 is/are objected to.
- 8) ☒ Claim(s) 32-77 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 32-59, drawn to reactant formulation, classified in class 526, subclass 134.
 - II. Claims 60-70, drawn to salt compositions, classified in class 556, subclass 186.
 - III. Claims 71-73, drawn to polymers, classified in class 526, subclass 281.
 - IV. Claims 74-77, drawn to monomers, classified in class 585, subclass 506.

Inventions II, III and IV are unrelated to each other. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions comprise three distinct compounds which share no common elements, structure or properties.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the reactive composition and the polymer share no common elements, structure or properties.

Each of inventions II and IV are related to invention I as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in

this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the monomer is deemed to be useful in catalytic hydrogenation, and the salt is deemed to be useful in catalytic polymerization of ethylenic monomers other than those discussed in this application, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Furthermore, each of the intermediate compounds lose its distinct properties when combined into the complex chemical composition which forms the reactive formulation. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Regardless of which group is elected, a further election of species is required. This application contains claims directed to the following patentably distinct species of the claimed invention: each of groups I-IV are directed to a substantial multiplicity of distinct reactant formulations, salt compositions, polymers and monomers, respectively.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, numerous generic claims exist with respect to subgeneric groups specified in the claims.

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Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Mr. Nestor Shust on 3/3/2003 a provisional election was made with traverse to prosecute the invention of group I, claims 32-59, species comprising butyl norbornene, 5-tris(ethoxy)silylnorbornene, tetracyclododecadiene, procatalyst 13 shown at page 98, and activator 9 shown at page 106, and that claims 32-42, 44, 45, 48-50, 52 and 55-59 were readable on the elected species. Affirmation of this election must be made by applicant in replying to this Office

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action. Claims 60-77 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

2. Following a search of the prior art, no references have been located which anticipate or render obvious the elected species. The remaining species are joined for examination.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

~~Claim Objections~~

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 33-42, 45, 56 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 33 (and claims 34-42, 56 and 59 as dependent thereon) requires R' to be a hydrocarbyl ligand. The chemical arts have an exceedingly clear understanding of what hydrocarbyl means, which is an anionic hydrocarbon. A hydrocarbon, in turn, is a compound consisting only of hydrogen and carbon (see Grant & Haackh's Chemical Dictionary at page 290). Although applicants have not set forth any clear alternative definition for "hydrocarbyl," the specification and claims contain exemplary species which are not hydrocarbyl ligands (i.e., they do not consist of hydrogen and carbon), but which are so-named (see specification at page 13, paragraph 1, and claim 35) and therefore the intended scope of "hydrocarbyl" cannot be determined. Particularly noteworthy is the apparent inclusion of proton (H^+) within the scope of "hydrocarbyl", an inclusion which is clearly repugnant to the ordinary meaning of the term.

(b) Claim 42 is indefinite because the preamble refers to "the method of claim 33," yet the parent claim is not a method but a composition. This claim will be further examined assuming applicants will amend the claim preamble to properly recite a reactant composition.

(c) It is not understood how any of the group I metals as recited in claim 45 are within the scope of parent claim 44 because the parent claim does not include such metals. The "alkaline earth metal" group consists only of group 2 of the periodic table

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(see Chang's Chemistry pg. 9, lines 14-16). Accordingly, claim 45 is indefinite because it is not understood how lithium, sodium and potassium are within the scope of the parent claim.

(d) In claim 41, it is not understood how any of the species which have no group 15 atom are within the scope of parent claim 33. The "labile electron donor" specified in claim 41 is apparently referring to the "Group 15 neutral electron donor ligand" of claim 33, and therefore most of the species of claim 41 cannot be within the scope of the parent claim because they contain no Group 15 element (i.e., DMSO, cyclooctadiene, water, numerous others).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 32 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Suld et al. (US 4,100,338).

The reference discloses in Example 1 the combination of $\text{NiCl}_2(\text{TBP})_2$ and norbornadiene, and contains all claimed limitations.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 32, 44-51, 55, 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,714,556).

The reference shows in examples 67-94 polymerizable compositions comprising norbornene or norbornene/styrene, a nickel transition metal catalyst and either HBAF or NaBAF (see col. 15, line 5 for definition of BAF), and contains all claimed limitations except for the use of a monomer which contains at least two polymerizable norbornene-type moieties. However, patentees suggest such use at col. 12, line 63 through col. 13, line 44, and specifically names norbornadiene at col. 13, line 44. One of ordinary skill in the art would be motivated to use these alternative embodiments because patentee has suggested their use, with reasonable success expected.

10. Claims 32, 44-52, 55, 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (US 5,629,398).

The reference shows in numerous examples, including at least examples 3 and 4, a polymerizable or copolymerizable composition comprising norbornene and triethylammonium tetrakis(pentafluorophenyl)borate, including all claimed limitations

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except for the use of a monomer which contains at least two polymerizable norbornene-type moieties. However, patentees suggest such use at col. 12, line 34-65. Regarding claim 52, the use of aluminate and borate alkoxides is suggested at col. 9, lines 8-13. One of ordinary skill in the art would be motivated to use these alternative embodiments because patentee has suggested their use, with reasonable success expected.

Allowable Subject Matter

11. Claims 53 and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references cited on this record do not anticipate or render obvious the particular species recited in these claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rob Rábago whose telephone number is (703) 308-4347. The examiner can normally be reached on Monday - Friday from 7:30 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Rob Rábago
Examiner
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RR
June 6, 2003